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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/759,265 | 01/16/2001 | Savine Bockel-Macal | 000348-201 | 1132 |

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| EXAMINER |
|---|
| SODERQUIST, ARLEN |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1743 | 5 |

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

| Application No. | Applicant(s) |
|---|---|
| 09/750,265 | Bockel-Macal et al. |
| **Examiner** | **Art Unit** |
| Arlen Soderquist | 1743 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4) ☒ Claim(s) 35-68 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 35-68 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

**Application Papers**

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. Claims 35-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of Clark. In the abstract Yoshikawa discusses an Expert system for prediction of safety in manufacture of a mixture of gases. Physical and chemical properties of many gases were stored in a computer as a database for the expert system. The system first checks the concentration of each gas to be mixed. If it is beyond the safety limit, the manufacture of the mixture is rejected. The reactivity of each gas is checked and if any of the gases react with each other, the gas mixture can be manufactured and a message is displayed. The explosion limit of the mixture is examined. The system also provides the order of addition of gases to a container, method of analysis, and pressure of the mixed gases. Yoshikawa does not teach if ternary diagrams are used in the process.

In the paper Clark discusses process vent collection system safety. To ensure process vent collection system (VCS) safety, proper design and operation begins with considering the system as a unit operation and giving it the same weight as a piece of process equipment. Due to the interconnective nature of VCS, hazards initiated in them can potentially affect >1 unit operation. Administrative, design, and operational recommendations are made to adequately deal with the safety issues such systems present. Topics discussed include: VCS design

recommendations; process hazards analysis (ownership and responsibility, process hazards review [PHR], hazards identification, hazards and operability analysis, consequence analysis, change management); understanding flammability (fire triangle, estimating flammability limits, temperature and pressure effects, mists and dusts, flammability diagrams, ignition sources); VCS hazards, reactions, and safety (explosion and flashback, internal and external, exothermic reactions and reactive chemicals); required operating modes (lean operation; inerted operation; interlocks, alarms, and control systems; mixing of streams; using monitors to determine composition, flow-ratio control; flammable sources; arrestor use); recommendations summary; and system-component design considerations (piping, relief-valve discharge, pressure drop, isolation or block valves, low-point drains and knockout pots, arrestors and liquid seals, thermal variation considerations, O and hydrocarbon monitors). Particularly relevant to the instant claims is the discussion relative to understanding flammability starting on page 68. Pages 69-70 show several ternary flammability diagrams and describe how they can be used to determine when or if a mixing process in the VCS enters or crosses the flammability region of the diagrams.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of the ternary flammability diagrams taught by Clark into the expert computer process of Yoshikawa because as shown by Clark they clearly show how the mixing process can show when flammable compositions can be produced during the mixing process.

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional references relate to flammability and programs used to model the mixtures.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (703) 308-3989. The examiner's schedule is variable between the hours of about 5:30 AM to about 5:00 PM on Monday through Thursday and alternate Fridays.

For communication by fax to the organization where this application or proceeding is assigned, (703) 305-7719 may be used for official, unofficial or draft papers. When using this number a call to alert the examiner would be appreciated. Numbers for faxing official papers are 703-872-9310 (before finals), 703-872-9311 (after-final), 703-305-7718, 703-305-5408 and 703-305-5433. The above fax numbers will generally allow the papers to be forwarded to the examiner in a timely manner.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

March 19, 2003
ARLEN SODERQUIST
PRIMARY EXAMINER